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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/556,833	04/21/00	CURRY	P 273012011100

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EXAMINER	
TRAN, M	
ART UNIT	PAPER NUMBER
1642	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/556,833	Applicant(s) CURRY ET AL.	
	Examiner MAU T TRAN	Art Unit 1642	

-- Th MAILING DATE of this communication appears on the cover she t with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *17-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2000* is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7* .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 17-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention of Groups I and II, claims 1-16, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6 filed on March 9, 2001. Applicant correctly argues that the method steps for both Groups I and II would be the same and therefore, the Examiner has rejoined Groups I and II, claims 1-16 for examination on the merits. Claims 1-16 are pending in the instant application.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).

The declaration does not have the serial # of the instant application listed as the instant invention. The declaration does not refer to the preliminary amendment that was filed as Paper #5 on February 28, 2001. Proper correction is required.

Specification

3. The use of the trademarks Rubi, Detox, and Titermax have been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Drawings

4. The drawings are objected to because Figure 1 is not clear as the picture covers the label identifying the drawings. A new Figure is recommended to clearly depict what is clearly described in the specification. Correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "BPA-MA, EA6 or B3" in claim 14 are relative terms which render the claim indefinite. These terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The abbreviations used in the claims are relative and not descriptive of what is claimed. It is suggested that applicant add in the names of the compounds in the claims.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2, 4-7, and 10-15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of treating cancer, does not reasonably provide enablement for preventing or inhibiting the development of metastatic cancer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Claim 2 is drawn to a method of inhibiting or preventing the development of metastatic cancer using photodynamic therapy and an adjuvant containing either mycobacterial cell wall or lipid A. However, the specification only disclose examples and teachings on how to use photodynamic therapy with adjuvant to treat cancer.

In determining the enablement of the instant claims, some of the factors that were considered were 1) nature of the invention, b) state of the prior art, c) level of predictability, d) amount of direction given, e) existence of working examples, f) quantity of experimentation to make the invention.

Hartwell et al (Science, 11997, 278:64-1068) teach that an effective chemotherapeutic must selectively kill tumor cells, that most anticancer drugs have been discovered by serendipity and that the molecular alterations that provide selective tumor cell killing are unknown and that even understanding the detailed molecular mechanism by which a drug acts often provides little insight into why the treated tumor cell dies (para bridging pages 1064-1065) and Jain (Sci. Am., 1994, 271:58-65) specifically teaches that systemic treatment typically consists of chemotherapeutic drugs that are toxic to dividing cells (p. 58, col 2, para 2). Thus to add into the equation the efficacy of preventing or even inhibiting cancer development in individuals would be impossible as each person's resistance to disease and tumor formation depends not only on their environmental exposures, diet, genetic predisposition and habits.

In addition, there is no guidance in the specification for determining the appropriate time prior to the development of tumors to begin the therapy or for identifying patients at risk for developing tumors. The specification provides insufficient guidance with regard to the issues raised above and provides no working examples which would provide guidance to one skilled in the art and no evidence has been provided which would allow one of skill in the art to predict the efficacy of the claimed methods with a reasonable expectation of success. In view of the above, one of skill in the art would be forced into undue experimentation to practice the claimed invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 5-9, 11, 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Korbelick et al (J. Photochem and Photobiol, 1998, Vol. 44:151-8).

Claims 3, 5-9 and 11-16 are drawn to a method of treating primary tumors in a subject by administering to the subject benzoporphyrin and an immuno-adjuvant selected from the group consisting of mycobacterial cell wall skeletons or lipid A wherein the effective dose is in the range of .05- 10 mg/kg of the photosensitizer and the photosensitizer is administered intravenously or intratumorally and the adjuvant is administered by injection into tumors and the photosensitizer is given and irradiated in said subject before adjuvant administration.

Korbelik et al taught a method of treating cancer in mice with photodynamic therapy using benzoporphyrin (10 mg/kg) given intravenously and irradiated before adjuvant and mycobacterium cell wall extracts given intratumorally. Thus, the limitations of the claims have been met.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5-9, 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korbelik et al (cited supra).

Claims 1, 5-9 and 11-16 are drawn to a method of treating metastatic tumors in a subject by administering to the subject benzoporphyrin and an immuno-adjuvant selected from the group consisting of mycobacterial cell wall skeletons or lipid A wherein the effective dose is in the range of .05- 10 mg/kg of the photosensitizer and the photosensitizer is administered intravenously or intratumorally and the adjuvant is administered by injection into tumors and the photosensitizer is given and irradiated in said subject before adjuvant administration.

Korbelik et al teaches a method of treating cancer in mice with photodynamic therapy using benzoporphyrin (10 mg/kg) given intravenously and irradiated before adjuvant and mycobacterium cell wall extracts given intratumorally. However, Korbelik et al did not disclose using this method to treat metastatic tumors or the administration of adjuvant systemically.

However, it would have been *prima facie* obvious for one of the ordinary skill in the art, at the time the invention, was made to use the teachings of Korbelik et al to derive at a method of treating metastatic cancer with systemic administration of

adjuvant because it was already known in the art that giving immuno-adjuvant can effectively enhance the photodynamic therapy and one would expect the treatment to work systemically as the adjuvant helps to sustain inflammation/immune response upon photodynamic therapy. In addition, the types of tumors which was disclosed both by applicant and Korbelik were solid tumors which can be effectively treated using the photodynamic therapy and adjuvant combination.

Conclusion

9. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mau Tran whose telephone number is 703-605-1165. The examiner can normally be reached on Monday-Friday from 8:00 a.m. – 5:30 p.m. with alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached on 703-308-3995. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1234.

Mau Tran, Ph.D.
Patent Examiner, Art Unit 1642
April 2, 2001

GEETHA P. BANSAL
PRIMARY EXAMINER